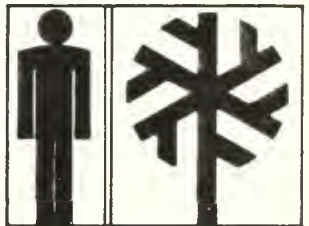


**DRAFT**

**Development Concept Plan  
with  
Environmental Assessment**

**DEVILS POSTPILE**  
Headquarters Area



**NATIONAL MONUMENT/CALIFORNIA**



DEVELOPMENT CONCEPT PLAN

with

ENVIRONMENTAL ASSESSMENT

Headquarters Area

Devils Postpile  
National Monument



Digitized by the Internet Archive  
in 2013

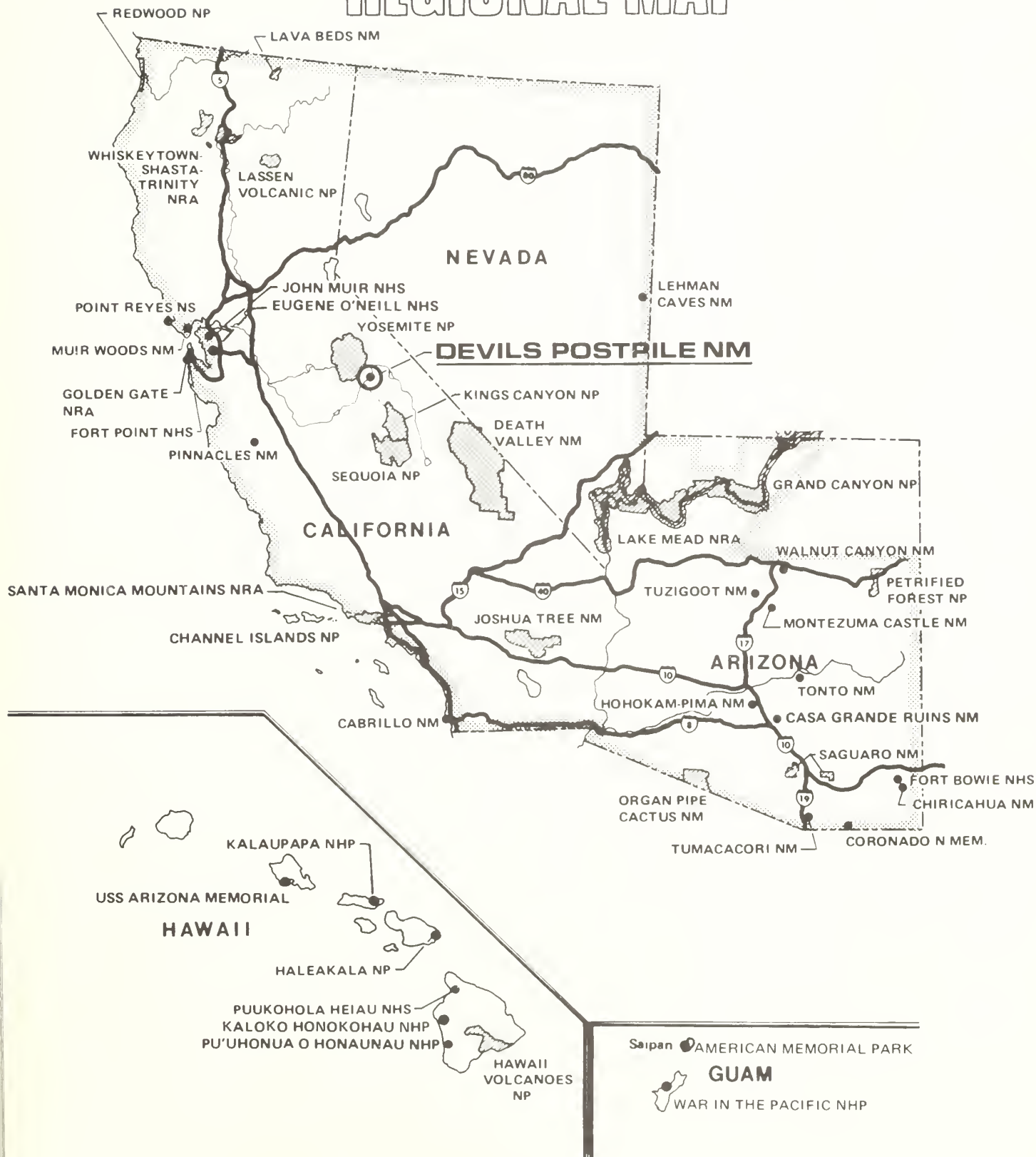
<http://archive.org/details/draftdevelopment00post>

## TABLE OF CONTENTS

	Page
INTRODUCTION-----	1
PLANNING ISSUES-----	3
ALTERNATIVES-----	6
ENVIRONMENTAL ASSESSMENT-----	10



# Western REGIONAL MAP



## DEVILS POSTPILE National Monument





## INTRODUCTION

### BACKGROUND

Devils Postpile National Monument was set aside by presidential proclamation in 1911 to preserve "the natural formations known as the Devils Postpile and Rainbow Falls" for their scientific interest and for public inspiration and interpretation. The Postpile, a mass of columnar-jointed basalt, is considered the most striking of all volcanic lava flows in the Sierra Nevada.

The 798.46 acre area is located thirteen road miles west of Mammoth Lakes, California, on a low standard paved road which terminates about two miles beyond the Monument turnoff at a Forest Service development known as Reds Meadow. Weather conditions dictate the open period for the area, generally June through October. Visitation is heaviest through the month of August, averaging 800 - 1,000 visitors on weekdays and 1,000 - 1,500 visitors on weekend days.

The primary use of the area is as a base for seeing and learning about the Postpile and other geological features of the Monument. Secondary uses include camping and long term parking for backpacking into the Ansel Adams Wilderness and along the John Muir and Pacific Crest trails.

Visitor facilities in the area include twenty-four campsites, a small visitor contact station, two comfort stations, a small picnic area, approximately five miles of hiking trails, space for parking about sixty cars and an informal campfire circle.

A private contractor to the Forest Service operates a shuttle bus system that serves campgrounds, trailheads and other developments along the Minarets Summit - Reds Meadow road, including Devils Postpile. This shuttle runs during the summer months between 7:30 a.m. and 5:30 p.m. during which time the road is closed to most private vehicle traffic.

The National Park Service visitor contact station is accessible to the physically handicapped by a properly designed ramp, but the rest of the area does not comply with accessibility standards. At this time there are no handicapped accessible restroom stalls or drinking fountains and no campsites or parking spaces designated for the handicapped. The trail to the Postpile does not comply with accessibility standards and it would probably be impractical to make it so. However, wheelchair bound visitors are often assisted in reaching the base of the Postpile by uniformed personnel as a normal part of the area operation. Probably because of the isolated location of the Monument, visitors in wheel chairs are not common.

A small residential and maintenance area is located a short distance east of the main visitor area. This facility consists of a small maintenance building, four cabins and one tent frame. In summer a house trailer is brought in from Bishop to supply an additional housing unit.

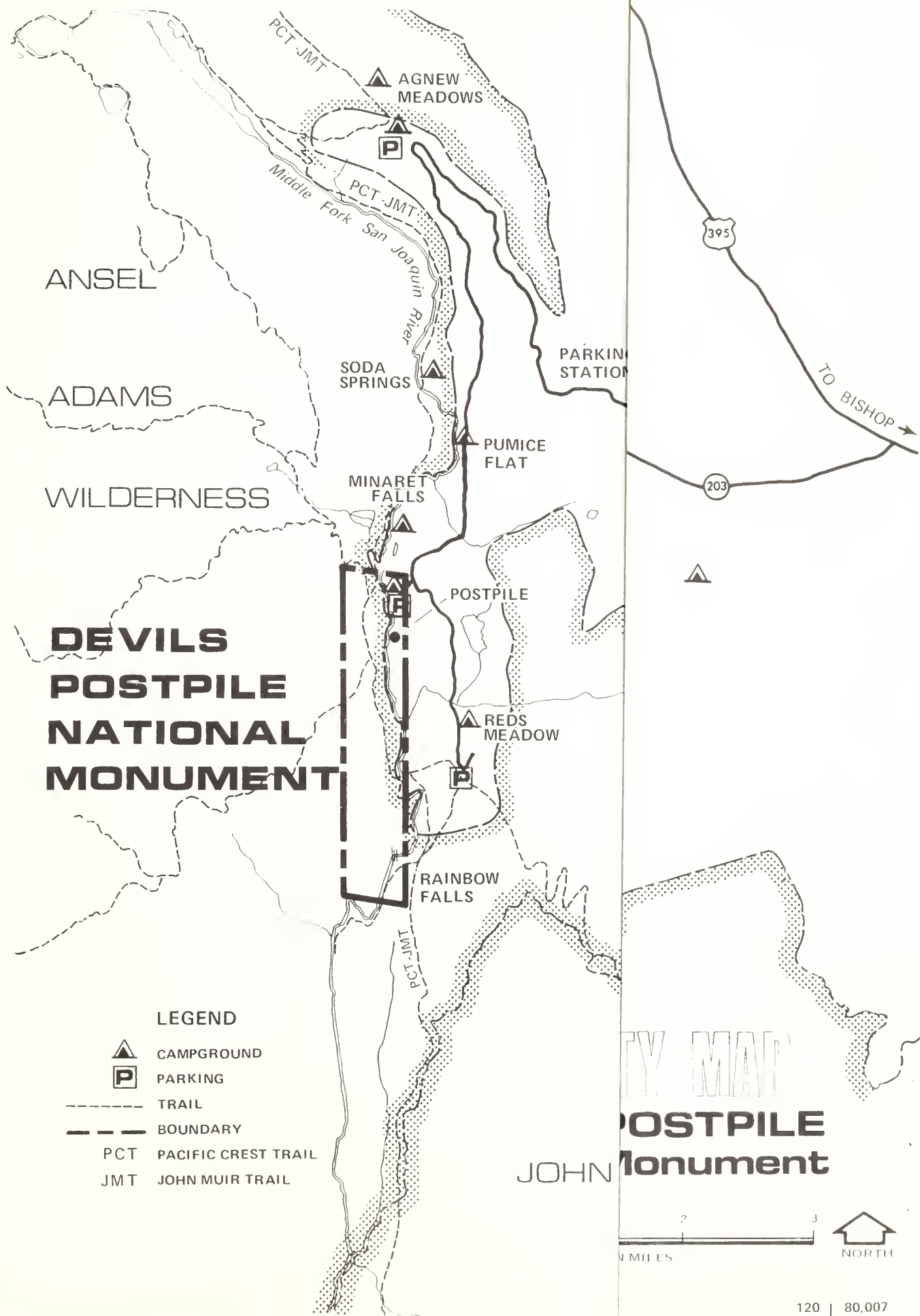
The area has an adequate water system with 100,000 gallons of storage. Sewage is piped to a sewer plant at Reds Meadow and, in case of breakdown, existing septic tanks and leach fields can be used temporarily. Commercial power is supplied underground by the Southern California Edison Company. Telephone service is provided by Continental Telephone Company.

The extent and nature of cultural resources within the developed area are not known. An archeological survey of the San Joaquin River banks in 1969 and a trail clearance survey in 1976 located two areas of scatters of worked obsidian, neither in the development. A brief survey of the roadway between the contact station and the first comfort station in 1983 yielded no archeological material. In order to be in compliance with Executive Order 11593 and the cultural resource preservation Act of 1980 the entire Monument is to be surveyed and any construction or rearrangement of facilities in the developed area will have to wait until the area is in compliance.

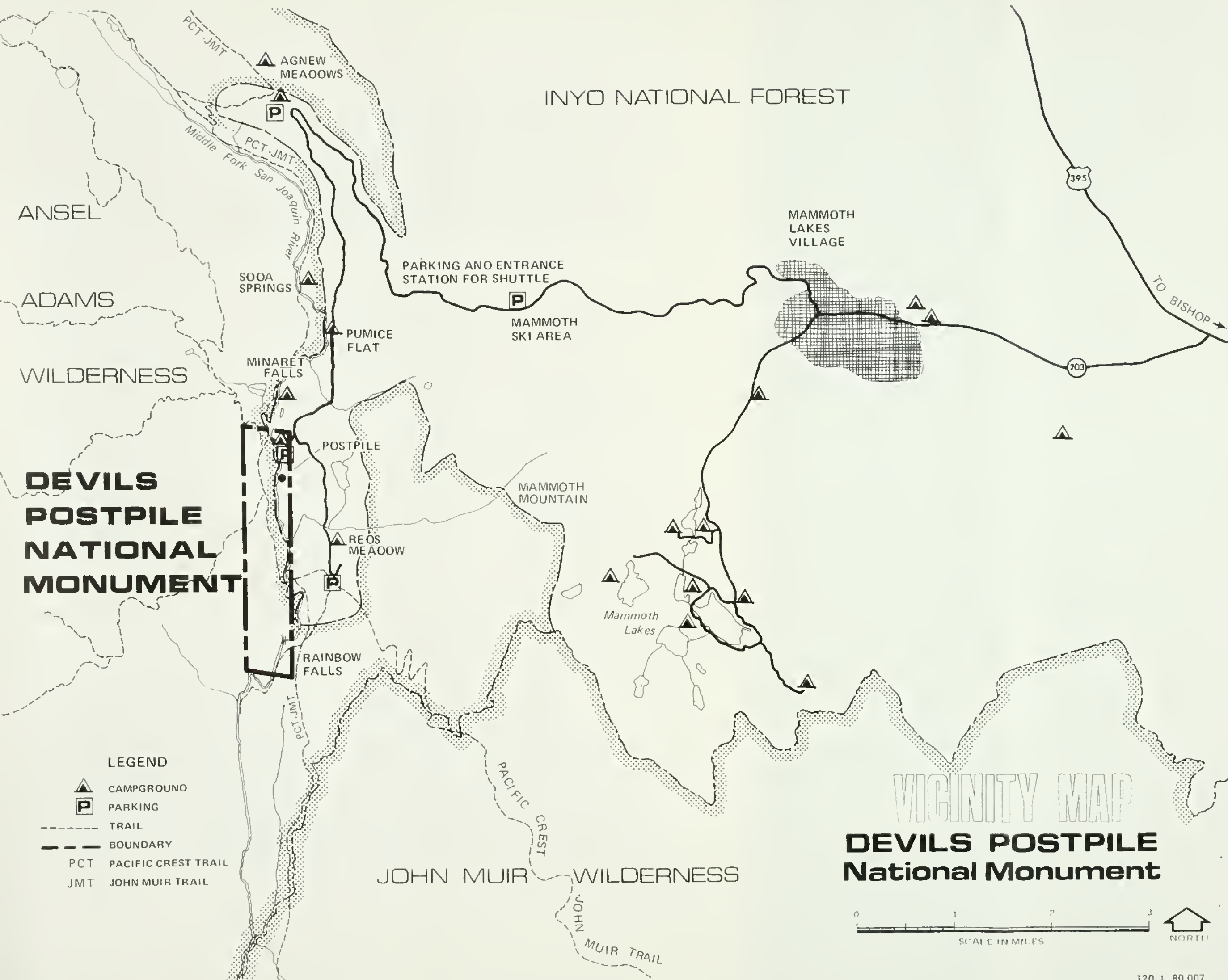
Devils Postpile is surrounded by lands of the Inyo National Forest. With the exception of a corridor approximately one mile wide along the road from Mammoth Lakes to Reds Meadow this land is within the recently created Ansel Adams Wilderness Area, including all lands within the Monument east of the San Joaquin River. On the access road to the Monument are five campgrounds totaling 147 sites, all within four miles of Postpile headquarters. The town of Mammoth Lakes is a rapidly developing base for both winter and summer recreational activities, providing restaurants, motels and a complete spectrum of shops and other commercial facilities. over 500 Forest Service campsites are also available near Mammoth Lakes.

#### PURPOSE OF THIS DOCUMENT

The purpose of this document is to describe for public and other agency review a number of issues that appear to need attention at this time and possible alternative courses of action to deal with the issues. None of the alternatives are being advocated by the National Park Service at this time, and, depending on review comments, additional alternatives may be developed and considered before a preferred course of action is approved. A brief description of the environmental consequences of each of the alternative courses of action is included. When the final plan is prepared indicating a preferred course of action a more detailed environmental assessment will be included if necessary.







## PLANNING ISSUES

### PARKING

Parking is of primary importance in the area. The present parking has evolved more or less on its own to occupy most of the usable space beneath the trees near the visitor center and picnic area. Bumper logs have been placed where necessary to prevent parking in the picnic area. The area is unsurfaced except for some crushed rock used to fill pot holes and soft spots. When the shuttle is running the parking is generally adequate in capacity. However, after the shuttle ceases operation in early or mid-September capacity is reached by late morning on weekends and parking then overflows into the closest part of the campground.

One of the contributing factors to parking congestion is the trailhead parking use in the area. Trailhead parkers come in early and generally occupy the spaces closest to the start of the trail. These cars stay an average of three days according to staff as opposed to about ninety minutes for the day-use visitor. Since the shuttle bus has been operating the number of cars parked overnight on August weekdays averages about 22, with only a slight increase to 23 overnight on weekends. Since trailhead parking generally occupies more than one-third of the available space, it has an impact on the area's primary purpose of providing for the visitor wishing to view and learn about the geological features. Actions to be considered include the following: (1) continuing undifferentiated parking as at present with the possibility of expanding into the closest part of the campground to accommodate late season demand, (2) defining separate parking for trailhead (over-night) use and for day-use only and (3) working with the Forest Service to relocate trailhead parking out of the Monument.

There is evidence of soil erosion and damage to trees in the undefined and unsurfaced portions of the parking area.

There is no area set aside for parking large recreation vehicles and turning them around is difficult once they enter the area.

Although the Forest Service has indicated its intention to continue the shuttle service, it is possible that budget restrictions or other factors could lead to a decision to discontinue its operation. In this event, the present parking would be inadequate through most of the season. Based upon average visitation for August for the past 10 years, it is estimated that space for about 60 to 65 cars would be needed on weekend days in addition to the 23 trailhead user spaces. This would require extending parking into one or more of four areas in the Monument; the campground, the picnic area, the former parking area between the visitor contact station and the meadow and an area adjacent to the boundary on National Forest land.

## CAMPGROUND

The campground consists of two sections designated "A" (east) and "B" (west) separated by a dry wash. Section "A" has fifteen sites and section "B" has nine sites. The campground is essentially unstructured. Although campsites are defined by a number (see Existing Conditions map) and the location of the fireplace, there are no barriers and no paving. Campers are free to drive and park as they please.

Much of Devils Postpile, including the campground, is covered by a layer of pumice. This material consists of particles mostly less than one centimeter in diameter. It is easily dislodged by foot and auto traffic and is so light in weight that it floats away in heavy rains or spring runoff. The campground shows evidence of this disturbance with exposed tree roots and gullies. In fact, it appears that most of the pumice layer is already gone in the heavily traveled parts of the campground.

As previously mentioned, parking frequently overflows into the first three sites of the "B" section.

There is no road connection between the two sections except by returning through the entire parking area.

Although two-way traffic is necessary on the only entrance road to the "A" section, the road is only twelve to fourteen feet wide.

In earlier times in the history of the Monument, the campground was probably a necessary visitor facility. At this time, however, it is not essential to the primary purpose of the area and its continued operation is inconsistent with the approved Statement for Management for Devils Postpile, which contains the following management objective: "Manage the Monument as an interpretive feature primarily for day use, with eventual elimination of overnight camping." There are 147 campsites on nearby National Forest land within Reds Meadow Valley which are generally not used to capacity and therefore provide ample opportunity for camping near the Postpile. The Forest Service has identified areas where two to three hundred sites could be added if the need arises.

In spite of the bare ground, unsurfaced roads and other inconveniences, many campers prefer the Monument campground to the Forest Service campgrounds in the vicinity. Apparently they feel that they have better protection as there is always a ranger available in case of emergency.

## RESIDENTIAL AND ADMINISTRATIVE FACILITIES

The formal administrative center within the Monument, the small office in the rear of the contact station, is not a good place to

work because of the interruptions and distractions of the contact station activities. Therefore, much paper work and meetings with official visitors are frequently carried out in the residential cabins. There is a need for an office workroom away from both the visitor contact station and from the residential quarters.

Monument housing would be considered substandard by most Americans. None of the cabins or the tent frame have bathrooms, although they do have kitchens. Showers and restrooms are located in a wing of the maintenance building.

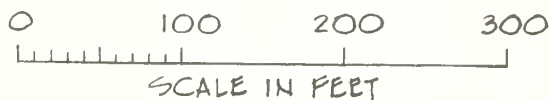
The remaining tent-frame cabin should be replaced with a winterized cabin of identical size. This would greatly reduce the maintenance costs involved with the tent-top and provide improved health and safety conditions for employees.

The house trailer that is used in the summer must be moved out in the fall to avoid damage from heavy winter snows.



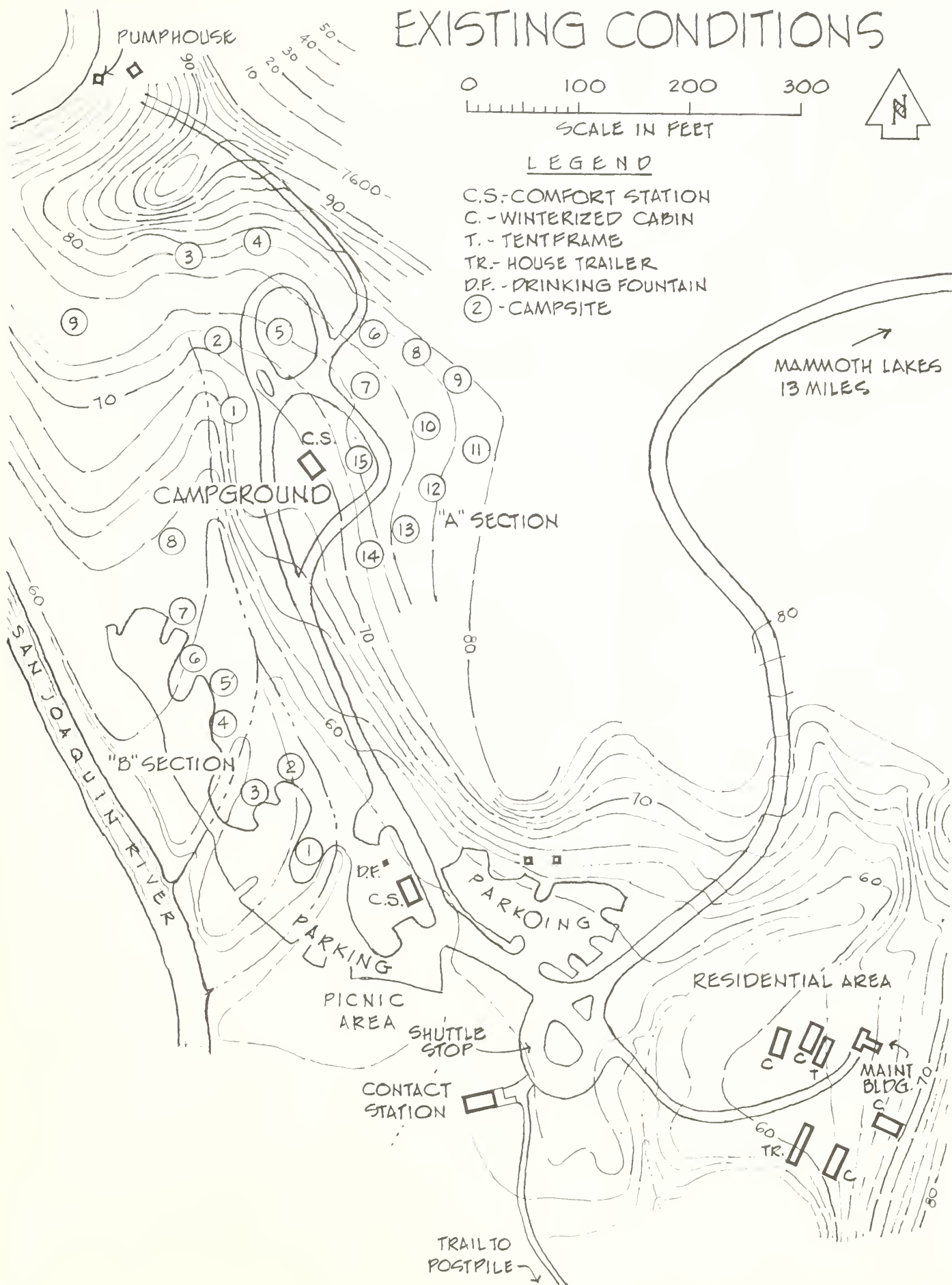


# EXISTING CONDITIONS



## LEGEND

- C.S. - COMFORT STATION
- C. - WINTERIZED CABIN
- T. - TENT FRAME
- TR. - HOUSE TRAILER
- D.F. - DRINKING FOUNTAIN
- ② - CAMPSITE





## ALTERNATIVES

### TAKE NO ACTION

This alternative would have operations and facilities continue as at present. The area would continue to serve as a base for interpretation of and access to the Devils Postpile and as a trailhead for backpackers. It would also continue to be the administrative and residential headquarters for the Monument.

The Monument staff would complete the upgrading of the quarters only to the extent of replacing the remaining tent-top with a winterized cabin. This would provide housing of five cabins and a mobile home. The small maintenance shop and bath house building would continue as is.

No changes other than minor upgrading as a result of normal maintenance activities would occur in visitor facilities. The contact station and comfort stations, which are adequate for present conditions, would remain the same with the exception of the installation of restroom facilities accessible to the physically handicapped in the comfort stations.

The campground would also remain essentially unchanged. Two-way traffic would continue to have to maneuver on a very narrow road. Conversely, in other places autos would continue to operate with only limited restrictions.

The Monument's five mile long trail system will remain unchanged except for minor upgrading to provide proper drainage and definition of width.

### CONVERT THE OPERATION OF THE AREA TO DAY USE ONLY

Under this alternative there would be no overnight use of the area. The campground would be removed including the comfort station in the "A" section and the area would be restored to a condition as near to natural as possible. Compacted soil would be scarified to allow penetration of moisture and all roads would be removed with the exception of a minimum service access road to the pumphouse area. Camping demand would be absorbed by nearby Forest Service campgrounds.

The use of the area for trailhead parking would also be terminated. A study of visitation and trailhead parking in September of 1983 after the shuttle ceased operation for the year indicates that the elimination of trailhead parking would reduce the number of spaces needed on weekend days from about 85 to about 60. Providing for the displaced trailhead parking would be the responsibility of the Forest Service, as all of the overnight trail use served is on lands administered by that agency.

The contact station would be retained as is. The nearby comfort station would also remain and fixtures accessible to the handicapped would be installed in accordance with General



# DAY-USE ONLY



## ABBREVIATIONS USED

C.S. - COMFORT STATION  
C - WINTERIZED CABIN  
T - TENTFRAME  
TR - HOUSETRAILER  
D.F. - DRINKING FOUNTAIN



## LEGEND

CAMP SITES	ROADS	BLDGs	
			EXIST. FACILITIES TO BE REMOVED
			EXIST. FACILITIES TO REMAIN
			NEW FACILITIES TO BE CONSTRUCTED





Services Administration standards. Parking would be redesigned slightly to provide for better circulation and for the accommodation of two oversize vehicles. The shuttle bus turnaround and tour bus parking would also be changed slightly to provide better circulation. All vehicle circulation and parking would be paved and properly barriered to reduce maintenance and environmental deterioration. Pedestrian circulation in the vicinity of the contact station and comfort station would be designed for handicapped access and paved to better define the intended circulation pattern and for visitor safety and convenience.

The fifteen site picnic area would be retained at its present size and location. At least two tables would be replaced with a type accessible to the physically handicapped.

No changes would be made in the Monument's trail system except for minor upgrading to improve drainage and define the travelway.

Elimination of the campground would allow staff members to cease operating the campground as a collateral duty and thereby devote full time to their regular duties of visitor information and protection, resource management and maintenance. With the exception of two units of quarters for protection purposes the residential facilities could be removed. Options for provision of remaining needs would be to combine housing with the Forest Service somewhere in the vicinity, or to require seasonal employees to find their own housing. As an alternative to the removal of the housing, the residential area, since it already exists, could remain with minor upgrading including, to the extent required by revised staffing, the replacement of the remaining tent-top and the trailer with winterized cabins and the construction of a small office as an addition to the maintenance building or as a separate structure.

#### CONVERT TO DAY-USE ONLY BUT RETAIN TRAILHEAD PARKING

Following this alternative would result in the elimination of camping and the removal of the campground. The northerly end of the campground would be restored to natural conditions as in the day-use only alternative. The southerly one-half acre of the campground near the contact station would be utilized along with the existing parking area to provide parking for about 85 vehicles. If the shuttle bus operation is ever discontinued, resulting in more private vehicles coming into the Monument, the parking area would be expanded into the abandoned campground.

The parking area would be organized for a more orderly and efficient parking pattern and the area would be surfaced with asphalt and striped as necessary. Concrete bumpers would be used to control autos. The area would be designed to allow for the circulation and parking of a few large recreation vehicles.

In conjunction with the upgrading of the parking area, the bus turnaround would be redesigned slightly and repaved as in the





# RETAIN TRAILHEAD PARKING

PUMPHOUSE



RETAIN ROAD  
TO PUMPHOUSE  
(SERVICE ONLY)

0 100 200 300

SCALE IN FEET

ABBREVIATIONS USED  
C.S. - COMFORT STATION  
C. - WINTERIZED CABIN  
T. - TENTFRAME  
TR. - HOUSE TRAILER



TO MAMMOTH  
LAKES

OBLITERATE  
CAMPGROUND

OBLITERATE  
CAMPGROUND

25 CARS, LONG  
TERM, THIS END

PARKING - 80 CARS  
DAY-USE & TRAILHEAD

C.S.

PICNIC  
AREA

SHUTTLE  
STOP

TOUR  
BUS  
PARKING

RESIDENTIAL  
AREA

MAINT.  
BLDG.

TR.

C

C

C

C

C

C

C

C

C

C

C

C

C

C

C

## LEGEND

CAMP-  
SITES ROADS BLDGS

EXIST. FACILITIES  
TO BE REMOVED

EXIST. FACILITIES  
TO REMAIN

NEW FACILITIES  
TO BE CONSTRUCTED



SAN JOAQUIN RIVER

TRAIL TO  
POSTPILE

CONTACT  
STATION



day-use only alternative. A surfaced bus loading/unloading area would be constructed and tied in with the access to the contact station and the trail to the Postpile.

The fifteen site picnic area would be retained at its present location near the contact station. Two tables would be made accessible to the physically handicapped.

The five miles of Monument trail system will remain virtually unchanged except for minor upgrading to improve drainage and define the width.

Elimination of the campground would allow staff members to cease operating the campground as a collateral duty and thereby devote full time to their regular duties of visitor information and protection, resource management and maintenance. With the exception of two units of quarters for protection purposes the residential facilities could be removed. Options for provision for remaining needs would be to combine housing with the Forest Service somewhere in the vicinity, or to require seasonal employees to find their own housing. As an alternative to the removal of the housing, the residential area, since it already exists, could remain with minor upgrading including, to the extent required by revised staffing, the replacement of the remaining tent-top and the trailer with winterized cabins and the construction of a small office as an addition to the maintenance building or as a separate structure.

#### CONTINUE ALL PRESENT ACTIVITIES - UPGRADE FACILITIES

With this alternative the present activities of day-use parking for hiking to the Postpile, camping and trailhead parking would all continue as at present but some reorganization for better control and improved visitor experience would be accomplished.

As in the previous alternative, parking would be expanded into the "B" section of the campground to a capacity of about 85 cars. Parking for day-use and for trailhead parking would be separated for better control, surfaced with asphalt and striped and barriered as necessary.

Pedestrian circulation would be upgraded and better defined by paving between the comfort station and the contact station.

The campground would have a new entrance from the access road to eliminate campground traffic through the parking area. Another two-way section of road would connect the two sections of the campground. In order to better define campsites, to reduce maintenance and to reduce the impact on the environment, the roads and parking spurs in the campground would be paved and barriers installed to keep cars on the paving. Although three campsites would be lost in the expansion of the parking area it is probable that they could be replaced in the reorganization of the campground, so the number of sites would stay the same at twenty-four. One or two sites would be made accessible to the physically

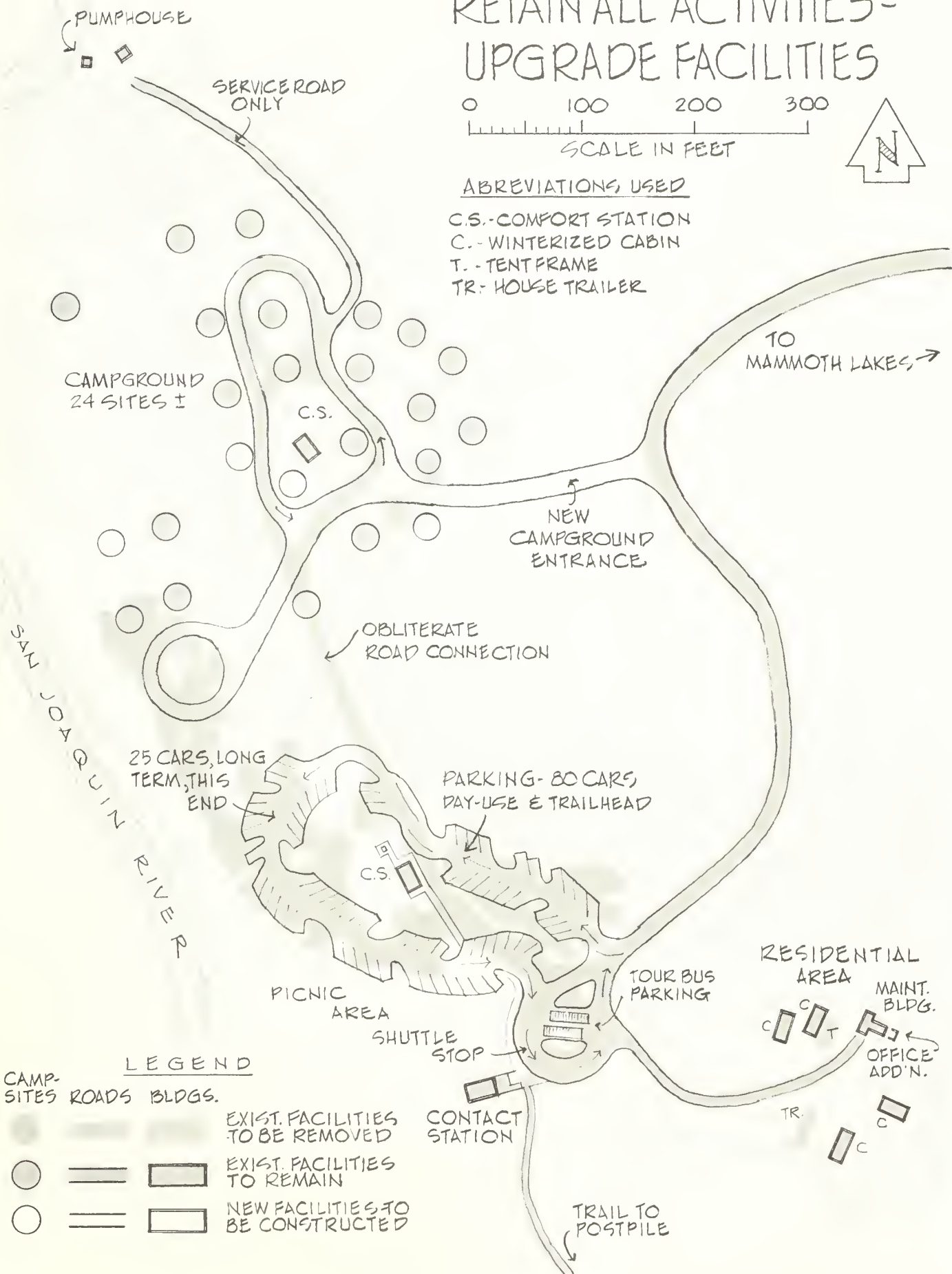


# RETAIN ALL ACTIVITIES- UPGRADE FACILITIES



## ABBREVIATIONS USED

C.S. - COMFORT STATION  
C. - WINTERIZED CABIN  
T. - TENT FRAME  
TR. - HOUSE TRAILER



## LEGEND

CAMP-  
SITES ROADS BLDGS.

EXIST. FACILITIES  
TO BE REMOVED

EXIST. FACILITIES  
TO REMAIN

NEW FACILITIES TO  
BE CONSTRUCTED





handicapped, as would the campground comfort station and drinking fountain.

The picnic area would be retained at its present location adjacent to the contact station. At least two of the fifteen sites would be equipped with tables accessible to the physically handicapped.

The five miles of Monument trails would be upgraded only to the extent of improving drainage and better definition of the travel way. Bridges would be retained at their present locations and standards.

The housing area would be upgraded, providing up to a total of six single or duplex cabin units as needed. A small office would be added to the maintenance building.





## ENVIRONMENTAL ASSESSMENT

### TAKE NO ACTION

The natural environment, particularly in the campground, would continue to be subjected to more than necessary degradation because of the lack of confinement of auto use in some areas. Erosion of the light soil, presently in evidence, would continue over an area of approximately three acres. Compaction of the subsoil in the same area would also continue, and unprotected trees in and on the periphery of the area would continue to suffer damage from autos and use by campers.

There are no known rare or endangered species in the vicinity of the developed area. Use of the area affects to some extent the natural life processes of bear, deer, small mammals and birds.

Aesthetically the area would be degraded by the signs of erosion and by dust raised by vehicular and other activity.

Following this alternative would result in no known impact on cultural resources. However, an archeological survey of the entire developed area should be conducted to determine whether any cultural resources exist and, if such resources are found, appropriate actions should be taken to preserve them.

Except for the relatively minor costs of eventual replacement of facilities there would be little in construction costs under this alternative. However, maintenance costs of restoring circulation on unpaved roads in the spring would be relatively high. More ranger time than normal would be spent in solving parking problems and properly locating visitors in campsites. Because of the unstructured parking, visitor's vehicles could also be expected to receive a higher than normal number of scrapes and dents from contact with other vehicles and with trees.

Continuation of the disorganized and unstructured parking system would result in some inconvenience to day-use visitors during times when the shuttle is not operating because cars parked for trailhead use would have occupied the parking spaces closest to the beginning of the trail. On busy days it would be necessary for late comers to park in the campground or wait until another car leaves. Campers would be subjected to dust from the unpaved circulation.

### CONVERT TO DAY-USE ONLY

If this alternative is followed there would be beneficial effects on the natural environment. Approximately two acres of campground would be returned to a more natural condition and all but minor foot and auto traffic would be removed. Removal of trailhead parking from the area would reduce the number of parking spaces required by about twenty. Partial removal of housing would reduce the size of the impacted area by about

one-quarter acre.

Aesthetically, the removal of camping, housing and trailhead parking would provide a more natural scene.

There would be no effect on cultural resources unless there are undiscovered archeological resources in the area.

Monetary costs of this alternative would consist of those involved in improvements to the existing parking area including barriers and more permanent surfacing, the obliteration of the campground and, if housing is retained, construction of an office addition and two units of housing. An indirect expense would be incurred in replacing trailhead parking on Forest Service land and construction of one-half mile of trail along Minaret Creek. A savings would result from reduced maintenance related to elimination of the campground. Impacts on visitors would depend on their intended purpose in the area. The impact on campers would be slight. They should be able to find comparable or nicer campsites in Forest Service campgrounds nearby. However, it would be possible to get on the John Muir - Pacific Crest Trail from either Reds Meadow or Soda Springs with the construction of about one-half mile of trail on the bed of an abandoned road along Minaret Creek. Trailhead users could also park elsewhere and ride the shuttle to the Monument to start their pack trip. However, trailhead users feel that their cars are better protected in the Monument, according to staff observations.

Visitors using the area as a place to learn about and to see the Devils Postpile would be benefited by the change. There would be no competition with trailhead users for parking spaces and the reduced number of visitors and cars in the area would make it easier to get information at the contact station in addition to providing a more natural and attractive setting.

#### CONVERT TO DAY-USE ONLY BUT RETAIN TRAILHEAD PARKING

Under this alternative approximately one and one-half acres of campground would be restored to a more natural condition. Expansion of the parking into one-half acre of the "B" section would result in the loss of one or two trees and some presently unsurfaced areas would undergo minor grading and surfacing for parking. Better definition, surfacing and barrier installation in the parking area would reduce the automobile impact on tree trunks and root systems.

Aesthetically, there would be minor improvements to the environment under this alternative. Removal of camping would provide a slightly more natural aspect to the scene. Surfacing of the circulation and parking would reduce dust in the air but it would also result in a partial loss of the rustic quality of the area.

There would be no effect on cultural resources unless there are undiscovered archeological remains in the developed area. No

construction or obliteration will take place before a thorough archeological examination of the area is made.

Monetary costs of this alternative would consist of those involved in improving and expanding the parking area, the obliteration of the campground and the construction of the office addition and two units of housing. These costs would be offset over a period of time in savings realized from greatly reduced maintenance costs on roads, campground and residential area. Elimination of the campground will result in staff members being freed to perform other duties.

The impact of the removal of the campground on campers would not be great; ample camping is available within four miles of the Postpile campground. However, those who prefer camping in the Monument because of a feeling of greater security would probably feel deprived to some extent.

Segregation of day-use and trailhead parking should have little impact on either group. Day-users would be able to find parking slightly closer to the contact station and, conversely, trailhead parkers would find themselves parked slightly farther from the trailhead. Surfacing and definition of the parking and roadway would benefit all users by making circulation patterns easier to follow and by reducing tight turns and cramped spaces. Surfacing of main pedestrian circulation should be beneficial to all users.

#### CONTINUE ALL PRESENT ACTIVITIES - UPGRADE FACILITIES

Impacts on the natural environment would be greater from this alternative than from others because of the proposed rearrangement and upgrading of campground roads. The new entrance would require construction of about five hundred lineal feet of two-way road; an area of approximately twelve hundred square yards would require clearing, grading and paving. This work would involve two or three mature trees, several small trees and miscellaneous other plants. Other road construction would cover about one thousand seven hundred square yards, mostly on already disturbed roadways in the existing campground.

Impacts on the natural environment associated with improvements in vehicle circulation and parking would include the loss of a few trees in the expansion into the "B" section of the existing campground and in minor changes in circulation. Beneficial impacts resulting from defining and surfacing circulation ways would include better protection of tree trunks and root systems.

Whether aesthetic impacts of this alternative would be considered beneficial or not would depend on the visitor's point of view. On the one hand, surfacing and reorganization of circulation and parking would present a more orderly appearance and reduce dust in the air. On the other hand, the area would lose some of its present rustic character.

There would be no known impact of the proposals in this alternative on cultural resources. However, an archeological

survey of the entire developed area should be made to determine whether any cultural resources exist and, if such resources are found, appropriate actions should be taken to preserve them.

The economic impacts of this alternative are greater than those of the other alternatives because of the cost of paving the campground roads.

The impacts on the visitor would be minor. All activities would continue as at present but facilities would be better organized to reduce confusion and congestion. Surfacing of circulation and parking would reduce dust and mud.

The following chart represents a perceived balance of positive and negative impacts on various sectors of the environment. Zero represents no impact or a balance between positive and negative impacts, ten would represent a very great impact. The assignment of values is subjective; a camper would probably view the social impact of removing the campground differently from a day-use visitor.

<u>ALTERNATIVES</u>				
	Take no action	Day use only	Remove C.G., retain trailhead	Continue as at present, upgrade
Ecological	-3	+3	+2	-2
Aesthetic	-2	+3	+1	+1
Cultural	*	*	*	*
Economic	-1	+1	+1	-3
Social	-2	0	+1	+1
Health**	0	0	0	0
Totals	-8	+7	+5	-3

\* Impacts on cultural resources cannot be determined until an archeological survey of the area is completed.

\*\* Impacts of all alternatives on health considered to be insignificant.





